REMARKS

Reconsideration of presently solicited Claims 1 to 20 respectfully is requested. For the reasons discussed in detail hereafter the subject matter of the presently solicited claims respectfully is urged not to be fairly suggested or otherwise rendered obviously apparent from a detailed reading of the cited prior publications.

It is not sufficient as a matter of law that words can be located in different contexts after a reading of Applicant's teachings when they are not combined or reasonably suggested to be combined by the authors of the references as claimed. See also, KSR Int'l. v. Teleflex Inc., 127 S.Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007), where the U.S. Supreme Court stated that "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." Additionally, unobvious advantageous results provided by an Applicant which are not obtained or reasonably suggested to be obtainable in the prior art are indicative of an improvement invention which is to be accorded patentable recognition pursuant to 35 U.S.C. § 101. Such advantageous results must be considered during the analysis of patentability. Applicant has done more than point out another advantage of a composition that was disclosed or suggested in the prior art. If the reasoning expressed in the Official Action when confronted with the present fact situation and the presently solicited claims were accurate, improvement inventions as contemplated by the statute would never be patentable. This result was not the intent of Congress. The prior art never suggested the specifically claimed composition of the presently solicited claims taken as a whole or the surprisingly advantageous results provided by Applicant.

Independent Claim 1 is amended consistent with Applicant's working Examples (Pages 14 to 18 of the Specification) to specify that the claimed thermoplastic resin composition is capable of exhibiting a flammability rating of V-0 or V-1 pursuant to UL94 when present in a thickness of 0.8 mm. Also, independent Claim 1 has been amended to specify the particularly preferred (C-1)/(C-2) weight ratio of 1.4 to 2. Support for the "1.4" lower limit of the range is provided by Applicant's Example 4 (Page 18 of the Specification). See also Paragraph [0027] at Page 10 of the Specification where the importance of the (C-1)/(C-2) weight ratio is discussed. Applicant provides, as presently claimed, a composition that exhibits surprisingly advantageous properties in view of the substantial presence of Component (A).

It respectfully is emphasized that the research of Applicant has provided a novel specifically defined thermoplastic composition which is absent in the prior art and displays a highly advantageous combination of properties as discussed in Applicant's Specification. Independent Claim 1 and dependent Claims 1 to 9, and 12 to 18 are directed to a thermoplastic resin composition. The claimed composition is capable of being molded to form a thin-walled product unlike many thermoplastic compositions. Dependent Claims 10, 11, 19 and 20 are directed to injection-molded articles formed from the thermoplastic resin composition. This advantageous molding characteristic is made possible through the limited inclusion of a liquid crystalline polymer in combination with other specified components, and makes possible excellent mechanical strength, a satisfactory absence of mold deposit, advantageous heat resistance, and flame retardance. The ability of the composition to be capable of exhibiting the specified excellent flame retardancy is particularly

noteworthy. All of these benefits are provided in combination, and unlike the prior art are now made possible by Applicant. It is contemplated that the specific named ingredients be combined in specific concentrations in order to satisfy the parameters for Applicant's claimed contribution.

As stated in independent Claim 1, the thermoplastic resin composition is prepared by the compounding of specified amounts of components (A), (B), (C), and (D). Component (C) is comprised of stated amounts of (C-1) and (C-2). Each of these components is identified with greater specificity hereafter. All page and line numbers correspond to those of the Substitute Specification filed on April 25, 2006.

Component (A) is 100 parts by weight of a thermoplastic resin which does not form an anisotropic melt phase. See [0008] at Page 4, lines 8 to 22, where this commonly inexpensive thermoplastic component is discussed. Preferred examples of (A) are polycarbonate resin, polyethylene terephthalate resin, polybutylene terephthalate resin, etc.

Component (B) is 15 to 45 parts by weight of a commonly more expensive and non-conventional thermoplastic which is a liquid crystalline polymer that does form an anisotropic melt phase. See [0009] to [0016] at Page 4, line 23 through Page 7, line 17. A preferred liquid crystalline polymer contains main structural units derived from p-hydroxybenzoic acid and 6-hydroxy-2-naphthoic acid.

Components (C-1) and (C-2) in a specified combination comprise Component (C) which serves as a flame-retardant component. (C-1) is a phosphor-based flame retardant and is provided in a concentration of 5 to 20 parts by weight. (C-2) is a silicone rubber and is provided in a concentration of 1 to 15 parts by weight. See [0017] to [0024] at Page 7, line 18 through Page 9, line 18, for a discussion of (C-1).

See [0025] at Page 9, line 18 through Page 10, line 6, for a discussion of (C-2). The concentrations of (C-1) and (C-2) are subject to the further proviso that the ratio of (C-1)/(C-2) ranges from 1.4 to 2 as presently amended. As presented in Applicant's Specification this stated ratio of (C-1)/(C-2) has been found by Applicant to be of importance if one is to achieve the reported advantageous results. See [0027] at Page 10, lines 13 to 15. This finding is totally absent in the prior art.

Component (D) is a filler. See [0028] to [0030] at Page 10, line 16 through Page 11, line 12.

The preferred (C-1) phosphor-based flame retardant of dependent Claims 2 and 12 to 20 is discussed at [0020] and [0021] at Page 8, line 14 through Page 9, line 3.

The preferred (C-2) silicone rubber formed by cross-linking organopolysiloxane of dependent Claims 3 and 12 is discussed at [0025] at Page 9, last line, through Page 10, line 3.

The preferred particle diameter for the (C-2) silicone rubber of 1 to 20 μm of dependent Claims 4 and 13 is discussed at [0025] at Page 10, lines 4 to 6.

The optional presence of 0.1 to 1 part by weight of the (E) dispersing agent of dependent Claims 5 and 15 is discussed [0033] at Page 12, lines 1 to 3.

The preferred phosphorous oxo acid monoester dispersing agent (E) of dependent Claim 6 is discussed [0033] at Page 11, line 18 to end of page.

The preferred polycarbonate thermoplastic resin (A) which does not form an anisotropic melt phase of dependent Claims 7 and 16 is discussed at [0008] at Page 8, lines 21 to 22.

The optional presence of 0.1 to 1 part by weight of a fluorine-based resin (F) of dependent Claims 8 and 17 is discussed at [0034] at Page 12, lines 9 to 24.

The preferred inclusion of a glass fiber filler (D) of dependent Claims 9 and 18 is discussed at [0029] at Page 11, lines 1 and 2.

The injection-molded article of dependent Claims 10 and 19 and the thin-walled housing of dependent Claims 11 and 20 are discussed at [0038] and [0039] at Page 13, line 24, through Page 14, line 11.

The maintenance of the rejection of presently solicited Claims 1 to 20 under 35 U.S.C. § 103(a) over the deficient teachings of the different technology of International Publication No. WO 01/05890 to Kanaka et al. in view of Published U.S. Patent Application No. 2002/051624 to Kobayashi and U.S. Patent No. 6,091,135 to Okada et al. would be lacking sound technical and legal bases. The teachings of Kanaka et al. are being evaluated by reference to corresponding U.S. Patent No. 6,956,072.

It readily is acknowledged that Kanaka et al. contemplates a thermoplastic resin composition of a thermoplastic polyester resin that does not form an anisotropic melt phase in a concentration of 50 to 99 parts by weight and a liquid crystalline polymer that does form an anisotropic melt phase in a concentration to 1 to 50 parts by weight. A detailed consideration of the complete composition of Kanaka et al. is in order and is respectfully requested. In all instances, Kanaka et al. requires the combined presence of certain phosphorus oxoacid monoester and diester represented by the specified formulae (I) and (II). Such phosphorus oxoacid monoester and diester is unlike the requirements of Applicant's claimed composition and injection molded article. Such phosphorus oxoacid monoester and diester is

included by Kanaka et al. for the express purpose of serving "as a dispersing agent for micro-dispersing (LCP)." See, for instance, Col. 7, lines 24 to 31 of Kanaka et al. It is mentioned in passing that a flame retardant may be included in the composition of Kanaka et al. See, Col. 11, lines 5 to 7 where it is stated: "As the flame retardant, organic halogen compounds and the like are used, but especially aromatic bromine compounds are preferable." However, a phosphor-based flame retardant (C-1) which is an essential component of Applicant's technology in combination with the other specified components is never identified, or otherwise taught or suggested for inclusion. This has been acknowledged by the Examiner. At Col. 9, lines 43 to 64 it is indicated that many other thermoplastic resins which do not form an anisotropic molten phase may be included "in an amount of 1-90 parts by weight to 100 parts by weight of compounds (A) and (B)." At lines 54 and 55 "silicone resin" is identified. There is absolutely no teaching or suggestion of the inclusion of a (C-1)/(C-2) combination in the specified ratio to yield a flame retardant combination which is demonstrated by Applicant to provide surprisingly improved results in the context of the other components of the composition. Were one to depart from Applicant's claimed parameters, Applicant's improved results are not achievable. See in this regard Applicant's Comparative Example 6 (Page 18 of the Specification) where it is shown that a poor UL 94 flammability result is achieved when using only a phosphorous-based flame retardant (C-1) in the absence of silicone rubber (C-2). See in this regard particularly, the "HB" test result that was achieved in Comparative Example 6. See also Applicant's Comparative Examples 7 which indicates that the claimed flame retardancy is not possible when blending silicones rubber only without (C-1). Additionally see Comparative Examples 1, 2, 3, 4, 5, and 8 which

demonstrate that the claimed flame retardancy is not achieved when (C-1) and (C-2) are provided in relative concentrations outside the claimed weight ratio.

The different technology of Kobayashi falls short of providing information that is capable of remedying the readily apparent deficiencies of the primary reference. It must be recognized from the title and throughout that Kobayashi merely concerns a dissimilar polycarbonate resin composition which incorporates a phosphate-based flame retardant. Kobayashi never contemplates a composition which includes a liquid crystalline polymer in any concentration, and certainly not a composition wherein both a non-LCP and an LCP are present in the concentrations as presently claimed, with the non-LCP being in the larger concentration, in combination with specific concentrations of other specifically defined ingredients. See further the data present in Applicant's Specification in the working Examples and Comparative Examples (as previously discussed) which demonstrates the importance of both (C-1) and (C-2) in the specified concentrations in conjunction with the required amounts of (A), (B), and (D). When both (C-1) and (C-2) are not provided in the specified concentrations, one does not achieve the overall combination of the advantageous properties discussed in Applicant's Specification, including (a) absence of a mold deposit problem, (b) ability to form a thin-walled injection-molded article, (c) reduced cost by minimizing the presence of LCP, (d) mechanical strength, (e) heat resistance, and (f) the specified flame retardance. Such composition and the advantageous results displayed upon injection molding that are made possible by Applicant's specifically claimed contribution could never have been reasonably gleaned or otherwise been capable of prediction by one skilled in the art from the different deficient teachings of the prior art at the time the claimed invention was

made. It takes considerably more than a hindsight reconstruction of different prior art teachings to appropriately defeat patentability under 35 U.S.C. § 103(a) particularly when the claimed combination of components was not suggested and data is presented in Applicant's Specification that demonstrates the achievement of a combination of advantageous results that was incapable of prediction at the time the invention was made.

In Okada et al. there is a description of a sealing compound having reduced stress through the blending of silicone rubber with a liquid crystalline polymer. However, there is no teaching of how advantageous flame retardancy can be imparted using a phosphorus-based compound and silicone rubber in any combination. Also, in the composition of Okada et al. the melt-processable polyester composition there contemplated is either exclusively or primarily a relatively expensive aromatic polyester which is capable of forming an anisotropic melt phase. This component of Okada et al. corresponds to component (B) of Applicant's claims which on the contrary must be present in the presently claimed invention in a minor concentration of only "15 to 45 parts by weight" in combination with specific concentrations of other specifically defined ingredients. The teachings of Okada et al. do not concern the concept of the presently claimed invention wherein the primary resin (A) component which is present in a concentration of "100 parts by weight" is a more common thermoplastic resin which does not form an anisotropic melt phase, such as a polycarbonate (dependent Claims 7 and 16). See Paragraph No. [0008] of Applicant's Specification where other more conventional thermoplastic resins suitable for use in the present invention which do not form an anisotropic melt phase are exemplified and are discussed. It readily is acknowledged the Okada et al. at

Col. 5, lines 7 to 22, indicates that other thermoplastic resins optionally can be incorporated in the liquid crystal polyester that is there contemplated. Such optional incorporation of another thermoplastic resin which does not form an anisotropic melt phase is never used in any of the working examples of Okada et al., and if ever implemented would always be in a minor concentration so as to not interfere with the patentees' stated objective (i.e., "so far as the object of the present invention is not disturbed"). This is not the concept of Applicant's presently claimed contribution where advantageous results are achieved with the minimal utilization of the relatively expensive LCP. The utilization of a substantial concentration of an LCP component would be contrary to the teachings of Okada, et al. and would not make possible the production of an encapsulated electronic component which displays the overall combination of advantageous properties now provided by Applicant. See the data provided in the Examples and Comparative Examples present in Applicant's Specification. As previously indicated, see Applicant's Comparative Example 7 which shows that the claimed flame retardancy is not possible in Applicant's different composition when blending silicone rubber only without (C-1).

Additionally, the liquid crystalline polymer of Okada, et al. is inherently flame retardant. Accordingly, Okada, et al. is totally lacking in a discussion of the inclusion of a two component flame-retardant, and clearly is lacking in a teaching of the inclusion of (C-1) and (C-2) as presently claimed. In fact, Okada, et al. does not discuss or suggest the inclusion of a flame retardant of any description. The silicone utilized by Okada, et al. in the different LCP or primarily LCP composition there contemplated serves a stress relieving function, and there is no discussion of the desirability of including a flame retardant, and certainly no discussion of the inclusion

of a two-part flame retardant in specific concentrations as presently claimed in the different composition of Applicant.

In summary, the primary reference never discloses or suggests how a combination of (A) and (B) as presently claimed could ever be rendered flame retardant as presently claimed. The fragmentary and different teachings of the secondary references are urged not to remedy the basic deficiencies of the primary reference and do not fairly suggest the limitations of Applicant's specifically claimed contribution.

It respectfully is submitted that no real basis for a finding of *prima facie* obviousness with respect to Applicant's specifically claimed subject matter.

See In re Rothermel et al., 47 CCPA 866, 125 USPQ 328, 331:

> It is easy now to attribute to this prior art the knowledge which was first made available by appellants and then to assume that it would have been obvious to one having the ordinary skill of art to make these suggested reconstructions. While such a reconstruction of the art may be an alluring way to rationalize a rejection of the claims, it is not the type of rejection which the statute authorizes. 35 U.S.C. § 103 is very specific in requiring that a rejection on the grounds the invention 'would have been obvious' must be based on the subject matter as a whole at the time the invention was made.

The withdrawal of the 35 U.S.C. §103(a) rejection respectfully is urged to be in order and respectfully is requested.

If there is any remaining point that requires clarification prior to the allowance of the Application, the Examiner is urged to telephone the undersigned attorney so that the matter can be discussed and promptly resolved.

Respectfully submitted,

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Date: September 2, 2009 By: Benton S. Duffett, Jr.

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